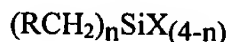


the hydrolysis and condensation polymerization of an organosilane containing an alkyl group substituted in the position  $\beta$  to silicon, the organosilane having the general formula:



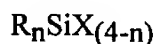
where  $n$  is 1 or 2;

C1 X is a halogen selected from the group consisting of chlorine, bromine, fluorine, and iodine; or an alkoxy selected from the group consisting of methoxy, ethoxy and propoxy substituents; and

R is an alkyl group having at least one but not more than two substituents in the position  $\beta$  to silicon that are electronegative; and wherein said siloxane polymer contains silanol groups.

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3. (Amended) ) A photo and thermally labile siloxane polymer which undergoes transformation to  $SiO_2$ -rich films by the elimination of  $\beta$ -substituted alkyl groups, obtained from the hydrolysis and condensation polymerization of an organosilane containing a  $\beta$ -substituted alkyl group, the organosilane having the general formula:



where  $n$  is 1 or 2;

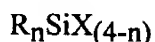
C2 X is a halogen selected from the group consisting of chlorine, bromine, fluorine, and iodine; or an alkoxy selected from the group consisting of methoxy, ethoxy and propoxy substituents; and

R is an alkyl group having at least one but not more than two  $\beta$ -substituents that are electronegative and at least one but not more than two  $\alpha$ -substituents on the  $\beta$ -substituted alkyl group, the  $\alpha$ -substituent being selected from the group consisting of chlorine, bromine, fluorine, iodine, hydroxy, methoxy, ethoxy, and acetoxy; and wherein said siloxane contains silanol groups

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C3 6. (Amended) A photo and thermally labile siloxane polymer which undergoes transformation to  $SiO_2$ -rich films by the elimination of  $\beta$ -substituted alkyl groups, obtained from

the hydrolysis and condensation polymerization of an organosilane containing a  $\beta$ -substituted alkyl group, the organosilane having the general formula:



where  $n$  is 1;

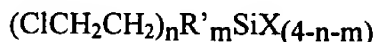
$X$  is a halogen selected from the group consisting of chlorine and bromine, or an alkoxy selected from the group consisting of methoxy and ethoxy substituents; and

$R$  is an ethyl group having at least one but not more than two  $\beta$ -substituents selected from the group consisting of bromine, fluorine, methoxy, and acetoxy and at least one but not more than two  $\alpha$ -substituents on the  $\beta$ -substituted ethyl group, the  $\alpha$ -substituent being selected from the group consisting of chlorine, bromine, fluorine, hydroxy, methoxy, and acetoxy;

and wherein said siloxane polymer contains silanol groups

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22. (Amended) A photo and thermally labile siloxane polymer of the structure  $[ClCH_2CH_2SiO(OH)]_p[ClCH_2CH_2SiO_{1.5}]_q$ , in which the ratio of  $p:q$  is from 1:20 to 1:1.33, which undergoes transformation to  $SiO_2$ -rich films by the elimination of  $\beta$ -substituted alkyl groups, obtained from the hydrolysis and condensation of an organosilane having the general formula:



where  $n$  is 1 or 2, and wherein when  $n = 1$ ,  $m$  is 0 or 1 and when  $n = 2$ ,  $m$  is 0;

$X$  is a halogen selected from the group consisting of chlorine, bromine, fluorine, and iodine; or an alkoxy selected from the group consisting of methoxy, ethoxy and propoxy substituents; and

$R'$  is any substituted or unsubstituted alkyl group.

23. (Amended) A photo and thermally labile siloxane polymer which undergoes transformation to  $SiO_2$ -rich films by the elimination of  $\beta$ -substituted alkyl groups, obtained from the hydrolysis and condensation polymerization of an organosilane containing an alkyl group substituted in the position  $\beta$  to silicon, the organosilane having the general formula: